ATTACHMENT D
ORDER NO. R5-2008-____
FINK ROAD LANDFILL
ITEMS TO BE INCLUDED IN A SITE INVESTIGATION REPORT

The outline below is a minimum requirement for items to be included and discussed in the text of all site investigation reports submitted to the Regional Water Quality Control Board. Other supporting data to be included in the report, either within the text of the report or in appendices, are *italicized* at the end of each section. All reports must be stamped and signed by a registered geologist, certified engineering geologist, or civil engineer registered or certified by the State of California. The Discharger's certification statement shall be included with each report and plan. Other pertinent information specific to this investigation shall also be included.

I. INTRODUCTION

Summary of past investigations
Purpose of the recent investigation, including the determination of vertical and horizontal extent of contamination
Scope of the recent investigation
Time period in which the recent investigation was carried out

II. SUMMARY

Number of wells drilled
Results of soil and water analyses
Ground water flow direction and gradient
Possible source determination
Vertical and horizontal extent of contamination

III. FIELD INVESTIGATION

Well Construction
- Number and depth of wells drilled
- Date(s) wells drilled
- Description of drilling and construction
- Approximate locations relative to facility site(s)

Supporting Data:
A well construction diagram for each well shall be included in the report which shows the following details:
- *Total depth drilled*
- *Depth of open hole (same as total depth drilled if no caving occurs)*
- *Footage of hole collapsed*
- *Length of slotted casing installed*
- *Depth of bottom of casing*
- *Depth to top of sand pack*
- *Thickness of sand pack*
- *Depth to top of bentonite seal*
- *Thickness of bentonite seal*
- *Thickness of concrete grout*
- *Boring diameter*

ITEMS TO BE INCLUDED IN A SITE INVESTIGATION REPORT

Casing diameter
Casing material
Size of perforations
Number of bags of sand
Well elevation at top of casing
Depth to ground water
Date of water level measurement
Monitoring well number
Date drilled
Location

Well Development
Date(s) of development of each well
Method of development
Volume of water purged from well
How well development completion was determined
Method of effluent disposal

Supporting Data:
Field notes from well development shall be included in report.

Water Sampling
Date(s) of sampling
How well was purged
How many well volumes purged
Levels of temperature, EC, and pH at stabilization
Sample collection, handling, and preservation methods
Sample identification
Analytical methods used

Soil Sampling
Date(s) of sampling
Sample collection, handling, and preservation method
Sample identification
Analytical methods used

IV. FINDINGS OF THE INVESTIGATION

Lithology
Types of sediments encountered
Presence, location, and lateral continuity of any significant sand, silt, or clay layers
Any visual signs of contamination

Supporting Data:
Well logs geologic cross-sections shall be included in the report.

Analytical Results of Soil and Ground Water Sampling

ITEMS TO BE INCLUDED IN A SITE INVESTIGATION REPORT

Analytical results of each monitoring well shall be summarized in tabular format.

Supporting Data:

Signed laboratory analytical reports with MDLs, PQLs, and QA/QC reports
Chain-of-custody forms

Water Levels

Static water levels measured when well drilled
Date(s) of water level measurements
Water levels determined prior to sampling

Supporting Data:

Dates of water level measurement, depths to ground water, and ground water elevations shall be tabulated and included in the report.

Ground Water Gradient and Flow Direction

Ground water gradient and flow direction determined by the investigation shall be discussed and compared to the regional gradient and flow direction.

Supporting Data:

A ground water contour map, drawn to scale, shall be provided which shows each well, its ground water elevation, and lines of equal ground water elevation. Ground water gradient and flow direction shall be shown on the map. The calculation of the gradient shall be included. Vertical and horizontal extent of groundwater contamination shall be shown on a map, including iso-concentration lines.

V. RESULTS OF QA/QC

QA/QC procedures
QC sample identification
Field blank analyses
Comparison of duplicate sample results

VI. CONCLUSIONS AND RECOMMENDATIONS

Evaluate the vertical and horizontal extent of contamination;
In tabular format and discussions, compare analytical result background levels and appropriate water quality objectives;
Identify any suspected source of contamination;
Recommend any further investigative needs based on data gaps; interim remedial measures; and public participation